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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,758	03/07/2002	Tien M. Nguyen	D-422	2860

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EXAMINER	
WONG, LINDA	

ART UNIT	PAPER NUMBER
2634	

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/092,758	NGUYEN ET AL.	
	Examiner	Art Unit	
	Linda Wong	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 March 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 March 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. **Claim 1** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. On page 3, paragraph [0023], lines 3-12, the adjusted timing signals are disclosed to be produced from a reference timing pulses, which are generated from a local oscillator, wherein the reference timing pulses are delayed by the adjusted timing pulse delay outputted by the timing pulse delay adjustor. On page 3, paragraph [0023], lines 1-3, the data transitions are generated from the baseband signals. Claim 1 recites "generating adjusted timing pulses from the baseband signal waveform encoding a self clocking digital bit stream". Based on the disclosure, the adjusted timing pulses are not generated from the baseband signal waveform, but they are generated from reference timing signals, which are generated from a local oscillator.
2. In addition to **Claim 1**, on page 3, paragraph [0023], lines 9-12, the adjusted timing pulse delay, outputted by the timing pulse delay adjustor, is used by the pulse

detector to shift the reference timing pulses to generate adjusted timing pulses. Claim 1 recites that the timing pulse delay adjustor for delaying the adjusted timing pulses for synchronizing the data transition pulses with the adjusted timing pulses. Based on the specification, the timing pulse delay adjustor produces a variable or signal that is used, by the pulse detector, to perform a shift, but it does not perform an action of delaying the adjusted timing pulses.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 1, 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (US Patent No.: 3544717) in view of Marko et al (US Patent No.: 5463351).

   a. **Claim 1**, assuming that the timing pulses are generated as disclosed by the specification, Smith discloses a pulse detector (Fig. 1, label 16 and 11) generating data transition pulses from the baseband signal waveform (Fig. 1, label 11 and Col. 2, lines 14-35), for comparing the data transition pulses with the adjusted timing pulses (Fig.1, labels T and transition pulses) for generating early and lag signals. (Fig. 1, labels early and late), a counter for counting the early and late signals (Fig. 1, label 10). Although Smith does not disclose a threshold comparator and a timing pulse delay adjustor, Marko et al disclose a

threshold comparator (Fig. 4, label 414 and Fig. 9, label 966) comparing the count of early and late pulses with a threshold (Col. 9, lines 15-21 and Col. 3, lines 11-27) and a timing pulse delay adjustor (Fig. 4, labels 414 and 416) outputting an adjustment delay for phase adjustment. (Fig. 4, labels 416, Fig. 9, labels 956 and 7, Col. 3, lines 18-24, and Col. 9, lines 15-21) It would be obvious to one skilled in the art to combine the threshold comparator and timing pulse adjustor found in Marko et al's invention to Smith's timing recovery system to reduce multi-path fading, weak signals, interference and flat fading. (Col. 1, lines 63-67)

a. **Claim 6**, Smith discloses a data transition pulse generator for generating data transition pulses (Fig. 1, labels 11 and transition pulses), a timing delay for delaying the reference timing pulses into the adjusting timing pulses (Fig. 1, labels 13 and T) and a lead and lag generator fro generating lead and lag signals for early or late arrivals (Fig. 1, labels 16, early and late) for data transition pulses (Fig. 1, label transition pulses) relative to adjusted timing pulses (Fig. 1, label T).

4. **Claims 3,4** are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (US Patent No.: 3544717) in view of Marko et al (US Patent No.: 5463351) and further in view of Carlson (US Patent No.: 6167526).

a. **Claim 3**, Although Marko et al and Smith do not teach selecting a threshold, Carlson discloses a timing system updating or selecting the parameters of a

window based on whether the predetermined value is less than the count of the early/late pulses. (Col. 3, lines 45-52 and Fig. 4) It would be obvious to one skilled in the art to incorporate Carlson's invention to Smith and Marko et al's inventions to provide more robust detection circuit, which is "less susceptible and sensitive to noise error."

b. **Claim 4**, Carlson discloses a threshold selector as recited and rejected in claim 3, and an adaptive means which updates or selects a new threshold when the predetermined rate is less than the adjustment rate. (Col. 3, lines 45-52 and Fig. 4) Although Carlson does not disclose an adaptive means for montiotring the rate in which the timing pulse delay is adjusted, Marko et al discloses monitoring the rate of adjustment. (Col. 3, lines 29-36) It would be obvious to one skilled in the art to incorporate Carlson's invention to Smith and Marko et al's inventions to provide more robust detection circuit, which is "less susceptible and sensitive to noise error."

5. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (US Patent No.: 3544717) in view of Marko et al (US Patent No.: 5463351) and further in view of Kim (US Patent No.: 5420895).

a. **Claim 5**, Marko et al discloses a magnitude of the early/late count outputted to a comparator, which compares the count with a threshold (Fig. 9, label 960 and 966) and a count sign used for outputting a delay for adjustment (Fig. 9, label 958 and 970). Although Marko et al discloses the opposite sign used for

increasing and decreasing the amount of adjustment needed, Kim discloses an adjustment circuit, wherein the count is increased for a lag pulse and decreased for an early pulse. (Col. 5, lines 28-30) It would be obvious to one skilled in the art to use Kim's method of counting to provide efficient synchronization of the pulses, wherein the pulses are shifted by the amount of lead/lags.

6. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (US Patent No.: 3544717) in view of Marko et al (US Patent No.: 5463351) and further in view of Rattlingourd (US Patent No.: 4280099).

   a. **Claim 7** inherits all the limitations of claim 6, but claim 6 does not disclose a data transition pulse counter and a lead and lag generator producing lead and lag signals when a data transition pulse occurs within the search window, Rattlingourd discloses a counter or detector for counting or sensing pulses within a window or duration (Fig. 1, label 14 and Col. 3, lines 44-47) and a lead and lag generator for generating lead and lag signals (Fig. 1, labels 16 and 38 and Col. 5, lines 13-23) when the data transition pulse occurs within a window (Col. 5, lines 13-23 and Col. 3, lines 44-48). It would be obvious to one skilled in the art to provide synchronized clock and data signal with reduced jitter. (Col. 3, lines 9-12)

7. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (US Patent No.: 3544717) in view of Marko et al (US Patent No.: 5463351), further in

view of Rattlingourd (US Patent No.: 4280099), further in view of Kim (US Patent No.: 5420895) and further in view of Tucci (US Patent No.: 5097489).

a. **Claim 8** inherits all the limitations of claim 7 but claim 7 does not discloses a window delay and a timing delay. Tucci discloses a data synchronizer comprised of a window delay for delaying the data pulses by ½ period delay and the pulses are centered within the window. Although Tucci does not disclose a timing delay, Kim discloses a timing delay (Fig. 2, label 50) for delaying the timing pulses by a timing pulse delay (Fig. 2, label PCO-PC4), wherein the timing pulse delay is generated by a timing pulse delay adjustor (Fig. 2, label 40) and the timing pulse delay is only adjusted when the running count exceeds a threshold (Col. 3, lines 40-45 and Col. 5, lines 28-38) It would be obvious to one skilled in the art to incorporate Rattlingourd, Kim, Tucci, Smith and Marko et al's inventions to provide a faster method of producing a synchronized data/clock signal.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Linda Wong whose telephone number is 571-272-6044. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LW

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